



Mr. Steve Trent  
Fluor Hanford Inc.  
825 Jadwin Ave.  
Richland, WA 99352

**Subject: Contract No. 630**  
**Analytical Data Package**

Dear Mr. Trent:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0705L340
SDG #	H3521
SAF #	F06-036
Date Received	5/30/07
# Samples	5
Matrix	WATER
Volatiles	
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	
Herbicides	
GC Alcohol	
Metals	
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,  
Lionville Laboratory Incorporated

Orlette S. Johnson  
Project Manager



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Lionville Laboratory, Inc.  
INORGANIC ANALYTICAL DATA PACKAGE FOR  
TNU-HANFORD F06-036 *H3521*

DATE RECEIVED: 05/30/07

LVL LOT # :0705L340

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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B1NFT1

TOTAL ORGANIC CARBON	001		W	07LTC009	05/08/07	06/04/07
TOTAL ORGANIC CARBON	001 REP		W	07LTC009	05/08/07	06/04/07
TOTAL ORGANIC CARBON	001 MS		W	07LTC009	05/08/07	06/04/07

B1N818

TOTAL ORGANIC CARBON	002		W	07LTC009	05/08/07	06/04/07
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B1N819

TOTAL ORGANIC CARBON	003		W	07LTC009	05/08/07	06/04/07
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B1NDD7

TOTAL ORGANIC CARBON	004		W	07LTC009	05/17/07	06/04/07
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B1N820

TOTAL ORGANIC CARBON	005		W	07LTC009	05/10/07	06/04/07
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LAB QC:

TOTAL ORGANIC CARBON	MB1		W	07LTC009	N/A	06/04/07
TOTAL ORGANIC CARBON	MB1 BS		W	07LTC009	N/A	06/04/07



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## Analytical Report

**Client:** TNU-HANFORD F06-036  
**LVL#:** 0705L340

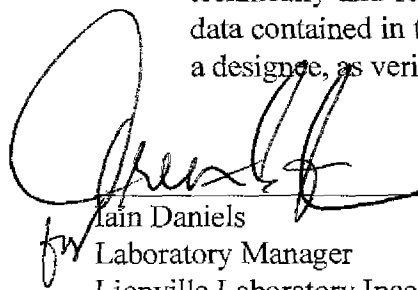
**W.O.#:** 11343-606-001-9999-00  
**Date Received:** 05-30-07

### INORGANIC NARRATIVE

1. This narrative covers the analysis of 5 water samples.
2. The samples were prepared and analyzed in accordance with the method checked on the attached glossary.

LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvLI certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.
4. The results presented in this report are derived from samples that did not meet LvLI's sample acceptance policy as noted on the Sample Receipt Checklist.
5. The method blank was within the method criteria.
6. The Laboratory Control Sample (LCS) was within the laboratory control limits.
7. The matrix spike recovery was within the 75-125% control limits.
8. The replicate analysis was within the 20% Relative Percent Difference (RPD) control limit.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated

6/13/07  
Date

njpi05-340

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

# Lionville Laboratory Incorporated

## WET CHEMISTRY

### METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	<u>EPA /600</u>	<u>SW846</u>	<u>OTHER</u>
Acidity	305.1		
___Alkalinity ___Bicarbonate ___Carbonate	310.1		
BOD	405.1		___ 5210B (b)
Ion Chromatography:			
___Bromide ___Chloride ___Fluoride	300.0	___ 9056	
___Nitrate ___Nitrite ___Phosphate	300.0	___ 9056	
___Sulfate ___Formate ___Acetate ___Oxalate	300.0	___ 9056	
Chloride	325.2	___ 9251	
Chlorine, Residual	330.5 (mod)		
Cyanide, Amenable to Chlorination	335.2	___ 9010B	
Cyanide, Total	335.2	___ 9010B	___ 9014 ___ ILMO4.0 (e)
Cyanide, Weak Acid Dissociable			___ 412 (a) ___ 4500CN-I (b)
COD	410.4(mod)		___ 5220C (b)
Color	110.2		
Corrosivity by Coupon		___ 1110(mod)	
Chromium VI		___ 7196A	___ 3500Cr-D (b)
Fluoride	340.2		___ 4500-FC
Hardness, Calcium	215.2		
Hardness, Total	130.2		
Iodide			___ ASTM D19P202 (1)
Surfactant	425.1		
___Nitrate-Nitrite ___Nitrate ___Nitrite	353.2		
Ammonia	350.3		
Total ___Kjeldahl ___Organic Nitrogen	351.3		
Total ___Organic ___Inorganic Carbon	415.1	___ 9060	
Oil & Grease	413.1	___ 9070	
___ pH ___ pH; paper	150.1	___ 9040B ___ 9041A	
Petroleum Hydrocarbons, Total Recoverable	418.1		
Phenol	420.1	___ 420.2 ___ 9065 ___ 9066	
___Ortho ___Total Phosphate	365.2		___ 4500-P B ___ C
Salinity			___ 210A (a) ___ 2520 (b)
Settleable Solids	160.5		
Sulfide	376.1		9030B/9034 (acid soluble)
Reactive ___Cyanide ___Sulfide		___ Section 7.3 (___ 9014 ___ 9030B)	
Silica	370.1		
Sulfite	377.1		
Sulfate	375.4	___ 9038	
Specific Conductance	120.1	___ 9050A	
Specific Gravity			___ D5057-90 ___ 213E (a)
Synthetic Precipitation Leach		1312	
Total ___Dissolved ___Suspended ___Solids	160 ___1 ___2 ___3		
Total Organic Halides	450.1	___ 9020B	
Turbidity	180.1		
Volatile Solids:			
___Total ___Dissolved ___Suspended	160.4		
Other:		Method:	

## **Lionville Laboratory Incorporated**

### **METHOD REFERENCES AND DATA QUALIFIERS**

#### **DATA QUALIFIERS**

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

#### **ABBREVIATIONS**

- MB = Method or Preparation Blank.
- MS = Matrix Spike.
- MSD = Matrix Spike Duplicate.
- REP = Sample Replicate
- LC = Laboratory Control Sample.
- NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

#### **ANALYTICAL WET CHEMISTRY METHODS**

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
  - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
  - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
  - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
  - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
  - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
  - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/04/07

CLIENT: TNU-HANFORD F06-036

LVL LOT #: 0705LS40

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B1NFT1	Total Organic Carbon	0.50 u	MG/L	0.50	1.0
-002	B1N818	Total Organic Carbon	79.2	MG/L	25.0	50.0
-003	B1N819	Total Organic Carbon	61.3	MG/L	25.0	50.0
-004	B1NDD7	Total Organic Carbon	107	MG/L	25.0	50.0
-005	B1N820	Total Organic Carbon	121	MG/L	25.0	50.0

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Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/04/07

CLIENT: TNU-HANFORD F06-036

LVL LOT #: 0705L340

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	07LTC009-MB1	Total Organic Carbon	0.50 u	MG/L	0.50	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/04/07

CLIENT: TNU-HANFORD P06-036  
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0705L340

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	BLNFT1	Total Organic Carbon	5.5	0.43	5.0	102.2	1.0
BLANK10	07LTC009-MB1	Total Organic Carbon	4.8	0.50u	5.0	96.0	1.0



Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/04/07

CLIENT: TNU-HANFORD F06-036

LVL LOT #: 0705L340

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE RPD	DILUTION FACTOR (REP)
=====	=====	=====	=====	=====	=====
-001REP	BLNFT1	Total Organic Carbon	0.50u	0.50u NC	1.0

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**FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS**

0705L340

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5.30.5

Date Rec'd 5-30-07 Date Due 6-29-07

31/10

Topic

005 BIN BAO

↓ 510-07 1150

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

### THIRD

**"COMPOSITE  
WASTE"**



**ଉତ୍ତରାଞ୍ଚଳ**

COLLECTOR <i>Teller</i>	COMPANY CONTACT TRENT, SJ	TELEPHONE NO. 373-5689	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION <i>West Lake Pore Water</i>	PROJECT DESIGNATION West Lake Pore Water Sampling	SAF NO. F06-036	AIR QUALITY <input type="checkbox"/>		

CE CHEST NO. <i>APP-04-011</i>	FIELD LOGBOOK NO.	COA 121527E520	METHOD OF SHIPMENT FEDERAL EXPRESS
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SHIPPED TO Ionville Laboratory Incorporated	OFFSITE PROPERTY NO. <i>See PTK 19646</i>	BILL OF LADING/AIR BILL NO. <i>See PTK 19646</i>
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MATRIX* =Air =Drum =Gulds =Drum =Lids =Liquid =Oil =Soil =Sediment =Tissue =Vegetation =Water =Wipe =Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Samples did not originate in radiological controlled area. No total activity associated with sample/samples <small>Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR 173.403, but are not classifiable per DOE Order 5400.5 (1990/1993)</small>	PRESERVATION <i>100% H2SO4 to pH &lt; 2/ Cool 4C</i>	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS TOC - 415.1 (Total organic carbon)
SPECIAL HANDLING AND/OR STORAGE						

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME																
NB19	WATER	<i>5/14/07</i>	<i>1440</i>	<i>X</i>															

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>L. Baechle</i>	DATE/TIME <i>5-23-07 0930</i>	RECEIVED BY/STORED IN <i>D. P. ...</i>	DATE/TIME <i>5-23-07 0930</i>		
RELINQUISHED BY/REMOVED FROM <i>J. Pacheco</i>	DATE/TIME <i>5-23-07 1215</i>	RECEIVED BY/STORED IN <i>M. A. Baechle</i>	DATE/TIME <i>5-23-07 1215</i>		
RELINQUISHED BY/REMOVED FROM <i>J. Pacheco</i>	DATE/TIME <i>MAY 29 2007 0845</i>	RECEIVED BY/STORED IN <i>M. A. Baechle</i>	DATE/TIME <i>MAY 29 2007 0845</i>		
RELINQUISHED BY/REMOVED FROM <i>L. Baechle</i>	DATE/TIME <i>MAY 29 2007 0845</i>	RECEIVED BY/STORED IN <i>L. Baechle</i>	DATE/TIME <i>MAY 29 2007 0845</i>		
RELINQUISHED BY/REMOVED FROM <i>Stacy</i>	DATE/TIME <i>5-30-07 0950</i>	RECEIVED BY/STORED IN <i>Stacy</i>	DATE/TIME <i>5-30-07 0950</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS
*Air XL=Drum liquids DS=Drum solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe O=Other	Samples did not originate in radiological controlled area. No total activity associated with sample/samples  Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR 173.403, but are not selectable per DOE Order 5400.5 (1990/1993)	HCl or H2SO4 to pH < 2. Cool to 4C	aGs*	1	250mL		TOC - 415.1 (Total organic carbon)

[illegible]

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
ELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>W. Baechler</i>	5-23-07 0930	<i>D. Baechler</i>	5-21-07 0930		
ELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>D. Baechler</i>	5-23-07 0940	<i>J. P. P. / P. P.</i>	5-23-07 0950		
ELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>J. P. P. / P. P.</i>	5-23-07 1215	<i>M. U. 45</i>	5-23-07 1215		
ELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>b-745</i>	MAY 29 2007 0845	<i>M. A. Baechler</i>	MAY 29 2007 0845		
ELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>A. Baechler</i>	MAY 29 2007 0845	<i>Ed EX</i>			
ELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>Ed EX</i>	5-30-07 0950	<i>D. P. P.</i>	5-30-07 1050		
ELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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**Lionville Laboratory Incorporated**  
**SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: TNU Hanford  
 Project/SAF/SOW/Release #: FOUO-036

Date: 5-30-07

LvLI Batch #: 0705L340

Sample Custodian: [Signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped? ☒ Hand Delivered ☐ Shipped  
 Carrier: [Signature] Airbill #: 7907 4914 827
2. Custody Seals on coolers or shipping containers intact, signed & dated? ☒ Yes ☐ No ☐ No Seals
3. Outside of coolers or shipping containers are free from damage? ☒ Yes ☐ No Comments:
4. All expected paperwork received (COC & other client specific information) sealed in plastic bag and easily accessible? ☒ Yes ☐ No
5. Samples received cooled or ambient?  
 Temp: 2.2 °C Cooler #: GRP-04001  
 How was the temperature taken? ☒ IR ☐ Temp. Blank ☐ Other (Specify):  
 Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) ☒ Yes ☐ No
6. Custody seals on sample containers intact, signed and dated? ☒ Yes ☐ No ☐ No Seals
7. COC (Client & LvLI) signed & dated? ☒ Yes ☐ No
8. Sample containers are intact? ☒ Yes ☐ No - wrong bottles used to collect samples.
9. All samples on COC received?  
 All samples received on COC? ☒ Yes ☐ No ☐ No
10. All sample label information matches COC? ☒ Yes ☐ No
11. Samples properly preserved? (If #5 is no, then this is no.) ☐ Yes ☒ No Samples are unpreserved
12. Samples received within hold times?  
 Short holds taken to wet lab? ☐ Yes ☐ No ☒ N/A
13. VOA, TOC, TOX free of headspace? ☐ Yes ☒ No ☐ N/A headspace in all samples
14. QC stickers placed on bottles designated by client? ☐ Yes ☐ No ☒ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) ☐ Yes ☒ No See all above.
16. Project Manager contacted concerning any discrepancies? ☒ Yes ☐ No ☐ N/A  
 Person Contacted: OS Date: 5-30-07

